

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer No.
Changyong LEE et al.	:	26817
	:	
Serial No. 10/691,781	:	Group Art Unit: 1761
	:	
Filed: October 23, 2003	:	Examiner: Kelly J. MAHAFKEY
	:	
Title: A PROCESS FOR PREPARING	:	Confirmation No. 7161
COOKED RICE IN ASEPTIC PACKAGE	:	
MADE OF LONG GRAIN HAVING	:	
PROPERTY OF FLUFFINESS	:	
	:	
	:	x

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF CHANGYONG LEE
SUBMITTED UNDER 37 CFR 1.116

Sir:

I, Changyong LEE, hereby declare as follows:

1. I have a Bachelor of Agriculture degree from the Department of Animal Products Science at Konkuk University.
2. I have performed experiments on cooked rice under different sterilization conditions. Three cooked rice samples were prepared. The first cooked rice sample was prepared under claim 4 of the above-described patent application, referred to as Sterilization Condition 1. The cooked rice was prepared by sterilization at a temperature of 130° C, 140-150° C for 4 to 8 seconds with a repetition of 4 to 10 times. A second cooked rice sample was prepared under the conditions described in U.S. Patent No. 3,892,058 to Komatsu et al. and in particular in Table 2, referred to as Sterilization Condition 2. The cooked rice was prepared

by sterilization at 130° C, 140-150° C for 10 minutes for only one time. A third cooked rice sample was prepared under the condition described in U.S. Patent No. 4,139,898 to Meyer et al., referred to as Sterilization Condition 3. The cooked rice was prepared by sterilization at 100° C for a single time of 30 minutes.

3. The hardness and stickiness of the cooked rice was measured. The method of measuring the hardness and stickiness of the cooked rice is as follows: We used the texture analyzer model TA-XT21 (Stabal Micro System Co.). Firstly, samples were pre-treated by heating the container (rice is placed), followed by keeping it for one hour. Secondly, a piece of rice as sample for an experiment was selected from several regions in the container, such as upper/medium/low regions. The selected rice was two or three pieces and the measurements were performed three times per one piece by the texture analyzer. The results of the measurements are shown in Table 1.

TABLE 1

Condition	Hardness	Stickiness
Sterilization Condition 1 at temp 130° C	4148.69	-35.83
Sterilization Condition 1 at temp 140° C	3128.62	-129.95
Sterilization Condition 1 at temp 150° C	3148.56	-87.85
Sterilization Condition 2 at temp 130° C for 8.4 minutes (Komatsu et al.)	2113.00	-281.89
Sterilization Condition 2 at temp 140° C for 5.8 minutes (Komatsu et al.)	2351.24	-295.24
Sterilization Condition 2 at temp 150° C for 4.5 minutes (Komatsu et al.)	2312.78	-262.72
Sterilization Condition 3 (Meyer et al.)	2534.52	-220.45

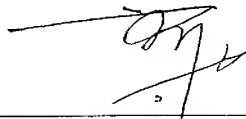
Hardness indicates the texture of the rice. A high hardness value means low destruction of the starch. A higher "-" value in stickiness indicates that the rice is more sticky.

4. The results show that the cooked rice treated under Sterilization Condition 2 (Komatsu et al.) and Sterilization Condition 3 (Meyer et al.) have high stickiness. The cooked rice treated under Sterilization Condition 1 of the present invention has low stickiness. The sterilization method of the present invention unexpectedly provides a fluffy cooked rice with low stickiness.

5. The results also show that that the cooked rice treated under repeated Sterilization Condition 1 at temperature of 130°C -150°C for 4 to 8 seconds for 4 to 10 times can have unexpected properties. More specially, Sterilization Condition 1 of the present invention is carried out intermittently in the chamber and the chamber is repeatedly in the state of open and close, and thus water and heat from rice can be evaporated and diffused out of the chamber. As a result, the amount of heat generated from surface and interior of cooked rice can be reduced and the textural properties of it can be increased. However, Sterilization Condition 2 (Komatsu et al.) cannot accomplish effects of Sterilization Condition 1 because it is carried out in the closed sterilization process in which most of heat from a closed sterilization apparatus is transferred into surface and interior of rice and thus the textural properties of rice are decreased.

6. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and, further, that these statements were made with knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Dated: 2005. 11. 04

By: 
CHANGYONG LEE